UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/575,394	04/07/2006	John A. Landis	10/888,000/TN333C	8982

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ART UNIT	PAPER NUMBER
2186	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
	10/575,394	LANDIS, JOHN A.
Office Action Summary	Examiner	Art Unit
	MICHAEL ALSIP	2186	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _07 April 2006_.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-6_ is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) _1-6_ is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on _07 April 2006_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All   b)☐ Some * c)☐ None of:
      1.☐ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _4/7/2006_.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Double Patenting

1.   **Claims 1-6** are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over **claims 1, 2, 29-31, 33, 48, 49, 72, 73 and 75** of copending Application No. 10575632.

Pending Application: 10575394	Co-pending Application: 10575632
Claims 1 and 4: A method and resource management system for a host computer, comprising: a resource database for storing indices to system resources of said host computer; a resource management software application that assigns system resources of said host computer and maintains a memory allocation page map of said resource database including indices to the assigned system resources in said resource database, wherein said memory allocation page map is organized according to a tiered page size model including a hierarchy of scales using	**Claims 1 and 48: A method and virtualization system for a host computer having at least one host processor and system resources including memory divided into most privileged system memory and less privileged user memory**, the system comprising: virtualization software that operates in said less privileged user memory and divides said host computer into a plurality of virtual partitions including at least one user guest partition and at least one system partition, said at least one user guest partition providing a virtualization environment for at least one guest operating system, and said at least

2^x as a scaling factor whereby an index page at each tiered page size level may allocate 2^x memory blocks at a size of the next lower tiered page size level.	one system partition maintaining **a resource database for use in managing use of said at least one host processor and said system resources**; at least one monitor that operates in said most privileged system memory and maintains guest applications in said at least one guest partition within memory space allocated by said at least one system partition to said at least one guest partition; and a context switch between said at least one monitor and said respective guest and system partitions for controlling multitask processing of software in said partitions on said at least one host processor.
	Claims 2 and 49: wherein said at least one system partition includes **a resource management software application that assigns system resources to respective system and guest partitions and provides an index to the assigned**

	system resource in said resource database.
	Claim 29: wherein said system resources include physical memory of said host computer.
	Claims 30 and 72: wherein a memory allocation page map of said resource database is organized according to a tiered page size model including a hierarchy of scales using 2x as a scaling factor whereby an index page at each tiered page size level may allocate 2x memory blocks at a size of the next lower tiered page size level.
Claims 2 and 5: wherein said resource management software application stores a descriptor for each assigned system resource at an index [G,M,K] in said memory as Mem(G,M,K) = $((G*2^{10}+M)*2^{10}+K)*2^{10}*(\text{word size})$, where word size is a power of 2.	**Claims 31 and 73**: wherein said resource management software application allocates memory to said respective system and guest partitions by storing a partition descriptor for a desired partition number [G,M,K] in said memory as Mem(G,M,K) = $((G*2^{10}+M)*2^{10}+K)*2^{10}*(\text{word size})$,

	where word size is a power of 2.
Claims 3 and 6: wherein x=10 and wherein a descriptor is stored in said memory allocation page map as a 32 bit index (2, 10, 10, 10) into a map of 4k pages that identifies the descriptor with said index, where a first bit indicates sub-allocation in smaller pages and three successive 2^10 values identify scaled pages.	**Claims 33 and 75**: wherein x=10 and wherein a virtual partition number is represented in said memory allocation page map as a 32 bit index (2, 10, 10, 10) into a map of 4k pages that identifies the virtual partition descriptor for the virtual partition with said virtual partition number, where a first bit indicates sub-allocation in smaller pages and three successive 2^10 values identify scaled pages.

2.   Although the conflicting claims are not identical, they are not patentably distinct from each other because the co-pending application anticipates the pending application.

This is a <u>provisional</u> obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 112

3.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4.   **Claims 1-6** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5.   Consider **claims 1 and 4**, the x in the term "2^x" does not have its bounds disclosed, in other words 'x' can be 0, 10, 1000, -1, .5 or any other value because there are no bounds, appropriate correction is required. The examiner is considering the term 'x' to be any value zero or greater for purposes of examination.

6.   Consider **claims 2 and 5**, the claim language does not disclose what the variables G, M and K are defined to be or represent, further clarification is required. Also these variables have no defined bounds, in other words 'G, M and K' can be 0, 10, 1000, -1, .5 or any other value, appropriate correction is required. The examiner is considering these variables to just be any value zero or greater for purposes of examination.

Consider **claims 3 and 6**, the claim language states a descriptor is stored in said memory allocation page map as a 32 bit index (2,10,10,10), however storage of a descriptor as claimed in **claims 2 and 5**, from which these claims depend, stores descriptors with an index of 3 variables, therefore these claims are inconsistent with each other. Are the 3 of the 4 variables claimed the G, M and K variables of **claims 2 and 5** or some other variables and if they are which of the 4 are they? Which and what is the fourth variable? How is the storage location determined using 4 variables, the formula disclosed in **claims 2 and 5** only include the G, M and K variables, what is the relevance of the fourth variable? The claim further states "a first bit indicates sub-

allocation", which bit is this limitation referring too? Are the entries (2, 10, 10, 10) each

considered a bit or is it the first bit of the 4k page? A sub-allocation of what in the

smaller pages? The claim further states: "three successive 2^10 values identify scaled

pages", what three successive 2^10 values? The examiner does not see in the claim

language three successive 2^10 values. Because the examiner is unable to determine

the intended scope of **claims 3 and 6**, it is improper for the examiner to rely on

speculative assumptions regarding the meaning of the claims and thus it would also be

improper to reject the claims using prior art (*In re Steele*, 305 F.2d 859,134 USPQ 292

(CCPA 1962)). Therefore, no prior art considerations have been given to the present

claim language.

Claim Rejections - 35 USC § 102

7.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8.   **Claims 1, 2, 4 and 5** are rejected under 35 U.S.C. 102(e) as being anticipated by

Kjos et al. (US 2004/0064668 A1).

9.   Consider **claims 1 and 4**, Kjos et al. disclose and method and resource

management system for a host computer, comprising (abstract): a resource database

for storing indices to system resources of said host computer (pg. 1 ¶ [0006], pg. 6 ¶

[0056]-[0059], pg. 7 ¶ [0062]); a resource management software application that

assigns system resources of said host computer and maintains a memory allocation

page map of said resource database including indices to the assigned system

resources in said resource database (pg. 1 ¶ [0006], pg. 3 ¶ [0038], pg. 6 ¶ [0056]-

[0059], pg. 7 ¶ [0062]), wherein said memory allocation page map is organized

according to a tiered page size model including a hierarchy of scales using 2^x as a

scaling factor whereby an index page at each tiered page size level may allocate 2^x

memory blocks at a size of the next lower tiered page size level (pg. 1 ¶ [0006], pg. 3 ¶

[0038], pg. 6 ¶ [0056]-[0059], pg. 7 ¶ [0062], where x can be 0 therefore making the

scale 1).

10.   Consider **claims 2 and 5**, as applied to **claim 1 and 4**, Kjos et al. disclose

wherein said resource management software application allocates memory to said

respective system and guest partitions by storing a partition descriptor for a desired

partition number [G,M,K] in said memory as $Mem(G,M,K) =$

$((G*2^{10}+M)*2^{10}+K)*2^{10}*(word\ size)$, where word size is a power of 2 (pg. 1 ¶

[0006], pg. 3 ¶ [0038], pg. 6 ¶ [0056]-[0059], pg. 7 ¶ [0062]).

Conclusion

11.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure. These references are cited in the attached PTO-892.

        Any inquiry concerning this communication or earlier communications from the

examiner should be directed to MICHAEL ALSIP whose telephone number is (571)270-

1182. The examiner can normally be reached on Monday through Friday 7:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt Kim can be reached on 571-272-4182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Matt Kim/   Michael Alsip
Supervisory Patent Examiner, Art Unit 2186   Examiner
                                                                             Art Unit 2186

/Michael Alsip/
Examiner, Art Unit 2186

November 19, 2008